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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

SCULLY, STEVEN M

ART UNIT	PAPER NUMBER
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1795

NOTIFICATION DATE	DELIVERY MODE
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ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

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Office Action Summary	Application No.	Applicant(s)	
	10/501,683	MARUYAMA, HIROSHI	
	Examiner	Art Unit	
	Steven Scully	4132	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 May 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 3-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 May 2008 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. The Amendment filed May 21st, 2008 has been entered. Claims 1 and 3-8 remain pending in the application. The previous objection to the drawings has been removed in light of Applicant's change to Figure 9.

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 102

3. Claims 1 and 8 stand rejected under 35 U.S.C. 102(b) as being anticipated by Yoichiro et al (JP11(1999)-176400A, previously cited, refer to attached official translation).

Regarding claims 1 and 8, Yoichiro is directed to a card-shaped thin battery (Figure 3) comprising:

- A battery module (1); and
- An outer case for housing the battery module, the outer case comprising:
 - A first case body (2) comprising connection walls;
 - A second case body (3) comprising connection walls, wherein the connection walls of the first case body and second case body connect the first case body and the second case body to each other on outer circumferential portions. In the instant specification disclosing background art (Page 1, Lines 10-28), Applicant discloses that the outer casing of Yoichiro is a connection of the first case body to the second case

body in a lid-fitting manner, indicating that the connection is made on outer circumferential portions of the casing.

- At least one selected from the first case body and the second case body comprising:
 - A dish-shaped case element (2b, 3b) with a housing portion swelling from one surface; and
 - A reinforcing frame (2c, 3c) fixed to the dish-shaped case element along a circumference of a swelling wall of the housing portion, wherein the reinforcing frame is a plastic molding, and the case element is a press-formed product made of a metal thin plate formed so as to be integrated with the reinforcing frame. This limitation is met in instant's specification (Page 1 Lines 21-24), in that Yoichiro discloses: "The upper and lower cases 31a and 31b (applicant's Figure 9) respectively are composed of a plate-shaped case wall member 35 obtained by press-forming an aluminum plate material and plastic frames 36 fixed to front and back sides of four circumferential portions of the case wall member 35."
- Wherein the battery module (1) is housed within the housing portion, and sealed in the outer case by attaching the connection walls of the first case body to the connection walls of the second body. In the instant specification (Page 1, Lines 10-28), Applicant discloses that the outer casing of Yoichiro is a connection of the first case body to the second case body in a lid-fitting manner, indicating that the connection is made on outer circumferential portions of the casing.

Yoichiro further discloses the amended limitations to claims 1 and 8 as discussed below.

- A battery module 1 **consisting essentially of a positive electrode, a negative electrode, and a separator.**

The battery module of Yoichiro **consists essentially of a positive electrode, a negative electrode, and a separator** (applicant's instant disclosure, Page 1, Lines 14-18). The thin battery further comprises an aluminum laminate sheet container (1) surrounding the battery module and the electrolyte. Therefore, Yoichiro fully discloses the amended battery module.

- **Either** one selected from the first case body and the second case body comprising....

Yoichiro discloses a thin battery comprising either one selected from the first case body and the second case body comprising a dish-shaped case element with a housing portion swelling from one surface, and a reinforcing frame fixed to the dish-shaped case element along a circumference of a swelling wall of the housing portion. The thin battery *comprises* such, and thus a first case body may be shown to have these features while the thin battery is open to further comprise the second case body having the same features, while not claimed. Thus, Yoichiro fully discloses the amended battery module.

- **The connecting walls are made of a metal thin plate.**

Yoichiro discloses a first case body and a second case body. Each case body comprises a resin to connect one to the other. The areas around the edges of the first

and second case body wherein said resin is located are the connecting walls, wherein each edge area is a connection wall (Figure 3). (It is noted that in applicant's instant disclosure the connecting walls are not contacting one another, but are connected by using a thermoplastic connection resin (27) (page 8, Lines 10-19 of applicant's instant disclosure)).

- **The battery module is housed directly within the housing portion.**

The battery module is in its entirety housed within the housing portion (in both interpretations of "consisting essentially of". Thus the battery module is housed directly within the housing portion.

Claim Rejections - 35 USC § 103

4. Claim 3 stands rejected under 35 U.S.C. 103(a) as being unpatentable over Yoichiro et al. (JP11(1999)-176400A) as applied to claims 1 and 8 above, and further in view of Hasegawa et al. (US 6,319,630).

Regarding claim 3:

Yoichiro teaches all of the limitations of claim 1, but is silent regarding a mounting region formed on an outer surface of the connection wall adjacent to the swelling wall of the housing portion, wherein the mounting region comprises a control module for the battery module and a cover for protecting the control module.

Hasegawa teaches a nonaqueous electrolyte battery capable of realizing a sufficiently large space for accommodating a control circuit (5, i.e. control module) and prevent enlargement of the size thereof. The battery element has terminal leads (3 and

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4) for the electrodes which are in contact with a control circuit (Figure 16, paragraph [0050], a printed circuit board (5a) provides an input for the terminal leads to be electrically connected to the control circuit). The control circuit is held at a position adjacent to the battery module (1) in a region provided for mounting the control circuit. The control circuit of Hasegawa is protected by a cover (see Column 3, Lines 57-60 discussing a decorative casing (cover); it is understood that a cover would inherently be attributed with protective characteristics).

It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the control circuit of Hasegawa to the battery element of Yoichiro, because Hasegawa teaches the benefit of regulating the electrical flow from the battery to the apparatus in which the battery is to be mounted.

5. Claim 4 stands rejected under 35 U.S.C. 103(a) as being unpatentable over Yoichiro et al. (JP11(1999)-176400A) modified by Hasegawa et al. (US 6,319,630) as applied to claims 1, 3 and 8 above, and further in view of Kozu et al (EP1033766A1).

Regarding claim 4:

Yoichiro modified by Hasegawa discloses all the limitations of claim 3 as well as output terminals on the control module and a protection circuit, but is silent about the control module comprising input terminals, and a pair of the input terminals of the control module are connected to be fixed to a positive tab and a negative tab of the battery module.

Kozu discloses a battery pack in a casing with a battery protection device (8) comprising safety unit (4) in which a protection circuit is constituted on a circuit board (14) for protecting the battery from over-discharging or over-charging. The battery protection device has input/output terminals (6a, 6b, 6c) that are mounted on the case for contacting to the outputs from the circuit board (14). Also, there is a positive electrode connection lead (30) and negative electrode connection lead (33) on the battery protection device contacting the electrodes (12 and 13) of the battery pack providing input terminals to the battery protection device (see Column 8, Line 45-Column 11, Line 37).

It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the control module of Yoichiro modified by Hasegawa with the design of Kozu's terminal connections from the battery to the control module (battery protection device) for the benefit of having a negative and a positive input to the control module from the battery module.

6. Claim 5 stands rejected under 35 U.S.C. 103(a) as being unpatentable over Yoichiro et al. (JP11(1999)-176400A) modified by Hasegawa et al. (US 6,319,630) as applied to claims 1, 3 and 8 above, and further in view of Kaneda et al. (WO0059063, refer to US6743546 for translation).

Regarding claim 5:

Yoichiro modified by Hasegawa discloses all the limitations of claim 3 as well as that the outer case is formed in a rectangular card shape (see Yoichiro's Figures 1 and

2; see Hasegawa's Figures 1 and 16), the mounting region is provided on one side of the outer case (see Hasegawa's Figure 1) and terminal windows for exposing the output terminals of the control module are opened in the principal plane wall (5; see Hasegawa's Figure 1 in which the control circuit is provided with a upper wall exposing the output terminals), but does not teach the cover comprising a principal plane wall covering an outer surface of the control module having a pair of leg chips projecting from both ends of the principal plane wall.

Kaneda discloses a laminate sheath type thin battery with a protective sheath (see Figure 7). The sheath is provided with legs (40, 41) on each side for accommodating side edges of an electrode assembly (2). The electrodes (13, 14) of said assembly are provided with an open area between protective pieces (31, 32). "The electrode assembly fixing means is a frame surrounding the periphery of the electrode assembly and accommodated within the casing with the electrode assembly. The frame includes:

- an abutment portion making contact with one end face of the electrode assembly from which the positive and negative electrode terminals extend, the abutment portion being formed with through holes for passing through the positive and negative electrode terminals,

- a pair of legs extending from both ends of the abutment portion to cover both side faces of the electrode assembly, and

- a pair of protective pieces extending from opposite side edges of the abutment portion in a direction opposite from the pair of legs so as to cover joints between the

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positive and negative electrode terminals and their respective leads from both sides.”

(Column 5, Lines 30-47)

It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the casing of the control module in Yoichiro modified by Hasegawa with extended legs on the protective cover of the protection circuit, as well as to the positive and negative electrodes for the benefit of the cover joint portion protecting the circuit and the electrodes, as well as for the benefit of providing the structure with an increased rigidity.

7. Claims 6 and 7 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Yoichiro et al. (JP11(1999)-176400A) as applied to claim 1 above, and further in view of Higuchi (US 6,154,004).

Regarding claim 6:

Yoichiro teaches all the limitations of claim 1, but is silent about a concave portion for preventing reverse insertion further being formed on one side of the outer case, wherein the concave portion is engaged with a convex portion for preventing reverse insertion provided in a battery insertion portion of an apparatus in which the battery is to be mounted.

Higuchi teaches a battery pack (10) with a concave surface (17) and a camera which has a convex portion to be coupled with the battery to prevent reverse insertion of the battery into the camera (Figure 2; Column 4, Lines 31-48).

It would have been obvious to one skilled in the art at the time of the invention to provide the battery pack of Yoichiro with the reverse insertion prevention tool taught by Higuchi for the benefit of preventing the battery from being inserted into the electronic apparatus incorrectly.

Regarding claim 7:

Yoichiro teaches all the limitations of claim 1, but is silent about a concave portion for preventing dropping formed on one side of the outer case, wherein the concave portion is engaged with the convex portion for preventing dropping provided in an apparatus in which the battery is to be mounted.

Higuchi teaches a battery pack (10) provided with connecting grooves (16a-16d) on the side of the lower case part (15) of the battery pack (10) and connecting projections on the video camera wherein a locking projection of the battery fitting part of the video camera is connected with a locking concave part of the battery pack to maintain the fitting (Figure 2; Column 4, Lines 49-59).

It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the fittings of Higuchi singularly or in a plurality onto the battery pack of Yoichiro for the benefit of locking the battery in place so it is not expelled from the electronic device undesirably.

Response to Arguments

8. Applicant's amendment to Figure 9 has overcome the objection to the drawings from the previous Office Action.

9. Applicant's arguments filed May 21, 2008 have been fully considered but they are not persuasive. Applicant argues on pages 1-2 of the Remarks that the cited reference does not disclose that "either one selected from the first case body and the second case body comprises a dish-shaped case element with a housing portion swelling from one surface and a reinforcing frame fixed to the disk-shaped case element along a circumference of a swelling wall of the housing portion." Applicant appears to be attempting to limit the invention to only one between the first case body and the second case body comprises the dish-shaped case element, however the limitation of "either" does not require that the second case body does not also have the claimed feature.

The arguments of total thickness are not material to the claimed invention since the thickness is not commensurate with the scope of the claimed invention.

With regard to the battery module consisting essentially of a positive electrode, a negative electrode, and a separator, this limitation is taught by Yoichiro. Applicant appears to be attempting to limit the invention to not include the aluminum laminate sheet, however the battery module of Yoichiro can be seen as the positive electrode, the negative electrode and the separator, even though the thin battery of Yoichiro further comprises an aluminum laminate sheet housing the battery module and the electrolyte. The claim does not necessarily avoid the aluminum laminate sheet in this

respect because the term “comprising” is open language that could include additional components.

With regard to the limitation of the battery module being housed directly within the housing portion, the battery module of Yoichiro is housed directly within the housing portion. While it is not in immediate contact with the housing portion, it is directly within the housing portion.

Claims 3-7 remain rejected. Applicant's argument that Yoichiro does not disclose each and every aspect of claim 1 is discussed above.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Contact/Correspondence Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven Scully whose telephone number is (571)270-5267. The examiner can normally be reached on Monday to Friday 7:30am to 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dah-Wei Yuan can be reached on (571)272-1295. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/S. S./
Examiner, Art Unit 1795

/Dah-Wei D. Yuan/
Supervisory Patent Examiner, Art Unit 1795